

ORDINANCE NO. 20-04

AN ORDINANCE OF ISLAMORADA, VILLAGE OF ISLANDS, FLORIDA, AMENDING THE VILLAGE'S COMPREHENSIVE PLAN TO ADOPT THE WATER SUPPLY PLAN AS MANDATED BY FLORIDA STATUTES 163.3177(6)(C)3; PROVIDING FOR THE TRANSMITTAL OF THIS ORDINANCE TO THE STATE DEPARTMENT OF ECONOMIC OPPORTUNITY; AND PROVIDING FOR AN EFFECTIVE DATE UPON THE APPROVAL OF THIS ORDINANCE BY THE STATE DEPARTMENT OF ECONOMIC OPPORTUNITY

WHEREAS, the Florida State Legislature has mandated that all local governments draft and adopt a Water Supply Plan (the "Plan") to local Comprehensive Plans to strengthen coordination of water supply planning and local land use planning; and

WHEREAS, Section 163.3184, F.S., establishes a process for adoption of comprehensive plans and Plan Amendments, and the Village adopted its Comprehensive Plan in 2001; and

WHEREAS, pursuant to Chapter 163, Part II, Florida Statutes (F.S.), Islamorada, Village of Islands, Florida (the "Village") proposes to amend the Village Comprehensive Plan (the "Comprehensive Plan") as provided for by the Water Supply Plan (the "Plan") and associated attached as Exhibit "A;" and

WHEREAS, the Village recognizes the need for better coordination of land use planning, development and water supply; and

WHEREAS, the Village Council previously adopted Resolution 16-06-35, thereby supporting Everglades restoration projects and advocating for increased freshwater flows into Florida Bay and the recharge of the Biscayne aquifer with potable water; and

WHEREAS, on November 8, 2018, the South Florida Water Management District approved its Lower East Coast Regional Water Supply Plan update; and

WHEREAS, Section 163.3177(6)(c)3, F.S., the Village is required to update its Water Supply Plan and adopt revisions to the Village's Comprehensive Plan by addressing the water supply planning requirements within 18 months of the regional plan's approval; and

WHEREAS, Village staff has prepared the Water Supply Plan titled "Water Supply Facilities Work Plan Update"; and

WHEREAS, the Local Planning Agency (LPA) held a public hearing on March 9, 2020 to review the proposed Plan and associated Amendments; and

WHEREAS, the Village Council held public hearings on May 7, 2020 and August 7, 2020 to review the proposed Plan; and

WHEREAS, the provisions of the Plan are consistent with the Village Comprehensive Plan, the Principles for Guiding Development in the Florida Keys Area of Critical State Concern, the Lower East Coast Water Supply Plan and the Florida Keys Aqueduct Authority's 20-Year Water System Capital Improvement Master Plan.

NOW, THEREFORE, BE IT ORDAINED BY THE VILLAGE COUNCIL OF ISLAMORADA, VILLAGE OF ISLANDS, FLORIDA, AS FOLLOWS:

Section 1. Recitals. The above recitals are true and correct and incorporated herein by this reference.

Section 2. Adoption of the Water Supply Facilities Work Plan. The Village Council hereby approves and adopts the proposed Comprehensive Plan updates to the Village's Water Supply Facilities Work Plan, as set forth herein and attached as Exhibit "A" hereto.

Section 3. Comprehensive Plan Amendment. The amendment to the Village's Comprehensive Plan is to reflect the updated Goals, Objectives, and Policies related to the Water Supply Facilities Work Plan.

Village of Islands Comprehensive Plan is hereby amended to read as follows ¹:

Policy XX: The Village shall assist the FKAA with water conservation efforts by implementing water conservation measures which include Florida Friendly Landscape Principles.

Policy XX: The Village shall coordinate with FKAA public education programs for the implementation of water conservation measures.

Policy XX: The Village shall comply with SFWMD water use restrictions when shortages are declared by SFWMD.

Policy XX: Islamorada, Village of Islands, (Village) hereby adopts by reference the Water Supply Facilities Work Plan (Work Plan), dated August 20, 2020 for a planning period of not less than 10 years. The Work Plan addresses issues that pertain to water supply facilities and requirements needed to serve current and future development within the Village's water service area. The Village shall review and update the Work Plan at least every five (5) years within 18 months after the governing board of the water management district approves an updated regional water supply plan. Any changes affecting the Work Plan shall be included in the annual Capital Improvements Plan update to ensure consistency between the Work Plan and the Capital Improvements Element.

OBJECTIVE 1-4.1: CONCURRENCY MANAGEMENT. Pursuant to Chapter 163, F.S., and Rule 9J-5, F.A.C., Section 163.3180, Florida Statutes (F.S.) for concurrency requirements, the Village shall issue no development order or permit for development unless the applicant provides narrative and graphic information demonstrating to the satisfaction of the Village that public facilities required by the subject development shall be in place concurrent with the impacts of development. Furthermore, the applicant shall assure that the facilities operate at or above adopted level of service (LOS) standards. The applicant's narrative and graphic information shall also demonstrate that the subject development shall not reduce the levels of service for public facilities serving the development below adopted LOS standards.

Policy 1-4.1.1: Ensure Existing Concurrency Management System is Consistent with SFWMD's Lower East Coast Water Supply Plan. Islamorada, Village of Islands shall ensure that the existing concurrency management system is consistent with the South Florida Water Management District Lower East Coast Water Supply Plan updated October 10, 2013 November 8, 2018 and the Florida Keys Aqueduct Authority's Master Plan 2020 20-Year Water Supply System Capital Improvement Master Plan December 2006.

Policy 1-4.5.5: Conserve Water Including Potable Water Supply. The water supply including the potable water supply shall be conserved by enforcing water standards as delineated in the Land Development Regulations and coordinating with the South Florida Water Management District and FKAA to implement any water restriction mandates issued, through the distribution of materials to the public and promoting conservation on the Village website.

Policy 1-4.7.2: Conserve Water Through Landscaping. The Village shall assist the FKAA with water conservation efforts by implementing water conservation measures which include Florida Friendly Landscape Principles.

Policy 1-4.7.3: Conserve Water Through Education. The Village shall coordinate with FKAA public education programs for the implementation of water conservation measures.

Policy 1-4.7.4: Conserve Water Through Restrictions. The Village shall comply with SFWMD water use restrictions when shortages are declared by SFWMD.

Policy 4-1.1.3: Adopt Potable Water Level of Service Standards. Islamorada, Village of Islands hereby adopts LOS standards for water, including potable water, as follows:

MEASURE	LOS STANDARD
Residential LOS	66.5 gal/cap/day
Non Residential LOS	0.35 gal/sq. ft./ day
Overall LOS	± 148-171 gal/cap/day
Equivalent Residential Unit	371.7 gal/day
Minimum Pressure	20 PSI at customer
Minimum Quality	Shall be as defined by the USEPA (part 143 National Secondary Drinking Standards, 40 CFR 143, 44FR 42198)

Policy 4-1.1.6: Coordinate Between Future Land Use and Potable Water/Wastewater System Needs. The Village's Land Development Regulations shall be enforced to ensure that incremental decisions by the Village concerning water, including potable water, and wastewater system needs, plans and the location and timing of improvements shall be consistent with the objectives and policies of the Future Land Use **Element, and the Conservation Element of this Comprehensive Plan, as amended on August 20, 2020**, and the South Florida Water Management District *Lower East Coast Regional Water Supply Plan* updated ~~October 10, 2013~~November 8, 2018.

Policy 4-1.1.10: Adopt a 10-Year Water Supply Facilities Work Plan. Islamorada, Village of Islands shall adopt a 10-Year Water Supply Facilities Work Plan Update, dated August 20, 2020 in coordination with the Florida Keys Aqueduct Authority that identifies existing and proposed alternative water supply projects, traditional water supply projects, conservation methods and reuse necessary to meet the water supply needs of the Village, consistent with the South Florida Water Management District *Lower East Coast Regional Water Supply Plan* updated ~~October 10, 2013~~November 8, 2018 and the Florida Keys Aqueduct Authority ~~Master Plan 2020~~20-Year Water Supply System Capital Improvement Master Plan December 2006 for the ~~2017~~ Islamorada Water Supply Facilities Work Plan.

¹ Additional text is shown as underlined; deleted text is shown as ~~strikethrough~~.

Policy 4-1.1.13: Adopt the Water Supply Facilities Work Plan. Islamorada, Village of Islands, (Village) hereby adopts by reference the Water Supply Facilities Work Plan (Work Plan), dated August 20, 2020 for a planning period of not less than 10 years. The Work Plan addresses issues that pertain to water supply facilities and requirements needed to serve current and future development within the Village's water service area. The Village shall review and update the Work Plan at least every five (5) years within 18 months after the governing board of the water management district approves an updated regional water supply plan. Any changes affecting the Work Plan shall be included in the annual Capital Improvements Plan update to ensure consistency between the Work Plan and the Capital Improvements Element.

OBJECTIVE 4-5.2: PROMOTE WATER CONSERVATION. Islamorada, Village of Islands shall assist the FKAA with water conservation and reuse efforts and assist in implementing the FKAA's Water Conservation Plan consistent with SFWMD's Water Shortage Plan, Water Conservation Program and Lower East Coast Water Supply Plan. Recognizing that the Village is located in an area that the SFWMD identifies as a "priority water resource caution area," the Village shall strive to lower its per person per day usage of water below ~~+/- 149.5 171~~ gallons per person per day (gpcpd) and will continue to work with the Florida Keys Aqueduct Authority (FKAA) through the site plan review process and the SFWMD to reduce demand within the Village for potable water.

Policy 4-5.2.1: Enforce Water Conservation Measures. Islamorada, Village of Islands shall continue to enforce Land Development Regulations which regulate ~~xeriscape landscape practices, Florida Friendly Landscape Principles~~, and the installation of water conservation irrigation systems and water-conserving plumbing fixtures.

Policy 4-5.2.4: Leak Detection and Repair Program. The Village shall develop a leak detection and repair program for all Village-owned facilities by the end of ~~2009~~~~2030~~. The Village will make every effort to establish this program at an earlier date, dependent on available programming of resources.

Policy 6-1.2.4: Implement Water Demand Management Policies and Programs. Islamorada, Village of Islands shall continue to cooperate with the Florida Keys Aqueduct Authority and the South Florida Water Management District to implement water demand management policies and programs consistent with the Lower East Coast Water Supply Plan ~~Update November 8, 2018~~~~October 2013~~, the ~~FKAA Florida Keys Aqueduct Authority Master Plan 2020~~ ~~20-Year Water Supply System Capital Improvement Master Plan December 2006~~ and the Village's 10-Year Water Supply Facilities Work Plan ~~2017-2020~~ Update.

Policy 8-1.1.3: Interlocal Agreement with FKAA to Identify the Availability of Water Supply to Serve Existing and New Development. By December 31, ~~2009~~~~2030~~, Islamorada, Village of Islands, shall enter into an interlocal agreement with the FKAA to formulate a mechanism that will allow the FKAA and the Village to identify the availability of water supply needed to serve existing and new development within the Village; monitor the use of potable water; and implement such alternative water supply projects, traditional water supply projects, conservation projects and reuse necessary to meet the Village's water supply needs. Village will make every effort to enter into an interlocal agreement at an earlier date, dependent on available programming of resources.

Policy 9-1.2.3: Adopt and Maintain the Following Level of Service Standards. Islamorada, Village of Islands shall adopt level of service standards for public facilities, for which concurrency is required, as set forth below. Prior to issuing a development order the Village shall review all proposed

development to ensure consistency with adopted LOS standards. No development shall be approved that is projected to decrease the existing LOS below the adopted standard, unless mitigation by the developer is approved by the Village Council.

SUMMARY OF LEVEL OF SERVICE STANDARDS

FACILITIES	LEVEL OF SERVICE STANDARDS
Wastewater	<p>The Village, shall at a minimum , adopt the current level of service standards as provided in Federal and State regulations. The current LOS standards are as follows:</p> <p>FLORIDA STATUTORY TREATMENT STANDARDS in MG/L - BOD/ TSS /TN/ TP</p> <ol style="list-style-type: none"> 1. Design flows less than or equal to 100,000 gpd (BAT) in MG/L-10 / 10 / 10 / 1 2. Design flows greater than 100,000 gpd (AWT) in MG/ L- 5 / 5 / 3 /1
Wastewater Supply LOS	70 gal/capita/day
Potable Water	<p>Residential LOS: 66.5 gal/capita/day</p> <p>Non-Residential LOS: 0.35 gal/ sq.ft ./day</p> <p>Overall LOS: <u>±-+ 149.5171</u> gallons/capita/day</p> <p>ERU: 371.7 gal/day</p>
Solid Waste	<p>Residential Disposal Quantity: 5.44 pounds/capita/day</p> <p>Non-Residential: 6.37 pounds/acre/day</p>
Stormwater	<ol style="list-style-type: none"> 1. Post development runoff shall not exceed the pre-development runoff rate for a 25-year storm event, up to and including an event with a 24-hour duration. 2. Stormwater treatment and disposal facilities shall be designed to meet the design and performance standards established in Rule 62-25.025, FAC, with treatment of the runoff from the first one inch of rainfall on-site to meet the surface water quality standards required by Rule 62-302.500, FAC. 3. Stormwater facilities which directly discharge into 'Outstanding Florida Waters' (OFW) shall provide an additional treatment pursuant to Rule 62-25.025(9), FAC. Stormwater facilities shall be designed so as to not degrade the receiving water body below the minimum conditions necessary to assure the suitability of water for the designated use of its classification as established in Chapter 62-302, FAC.
Recreation and Open Space	3.79 acres per 1,000 population
Roadways	<p>U.S. 1 shall be maintained within 5% of LOS C as measured on an overall countywide basis not dependent on any single road segment, using the measured median travel speed from the annual report of public facilities capacity .</p> <p>All other roadways for which the Village is responsible shall have sufficient available capacity to operate at or above LOS measured by peak hour volumes at all intersections, including but not limited to all intersections with U.S. 1.</p>

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Section 4. Transmittal. Pursuant to Sections 163.3184 and 163.3187(6)(a), Florida Statutes, the Village Clerk is authorized to forward a copy of this Ordinance to the State Department of Economic Opportunity (the "DEO").

Section 5. Severability. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Ordinance, but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

Section 6. Transmittal to the Florida Department of Economic Opportunity.
Village Clerk is authorized to forward a copy of this Ordinance to the Florida Department of Economic Opportunity ("DEO") for approval pursuant to Sections 380.05(6) and (11), Florida Statutes.

Section 6. Effective Date. This Ordinance shall not be effective immediately upon adoption. The Amendment shall not take effect until the date the final order is issued by the Department of Economic Opportunity to be in compliance in accordance with Chapter 163.3184, Florida Statutes. The Department of Economic Opportunity ("DEO") notice of intent to find the Amendment in compliance shall be deemed to be the final order if no timely petition challenging the Amendment is filed.

The foregoing Ordinance was offered by Councilwoman Deb Gillis, who moved for its adoption on first reading. This motion was seconded by Vice Mayor Ken Davis, and upon being put to a vote, the vote was as follows:

Mayor Mike Forster	YES
Vice Mayor Ken Davis	YES
Councilwoman Deb Gillis	YES
Councilman Jim Mooney	YES
Councilman Chris Sante	YES

PASSED on the first reading this 7th day of May, 2020.

The foregoing Ordinance was offered by Councilwoman Deb Gillis, who moved for its adoption on second reading. This motion was seconded by Councilman Jim Mooney, and upon being put to a vote, the vote was as follows:

Mayor Mike Forster	YES
Vice Mayor Ken Davis	YES
Councilwoman Deb Gillis	YES
Councilman Jim Mooney	YES
Councilman Chris Sante	YES

PASSED AND ADOPTED on the second reading this 20th day of August, 2020.



MIKE FORSTER, MAYOR

ATTEST:



KELLY S. TOTH
KELLY TOTH, VILLAGE CLERK

APPROVED AS TO FORM AND LEGALITY
FOR THE USE AND BENEFIT OF
ISLAMORADA, VILLAGE OF ISLANDS ONLY



ROGET V. BRYAN, VILLAGE ATTORNEY

Exhibit "A"

Islamorada Village of Islands, Florida

WATER SUPPLY FACILITIES WORK PLAN UPDATE



WATER SUPPLY FACILITIES WORK PLAN UPDATE

FINAL

Local Planning Agency Hearing • March 9, 2020
First Reading • May 7, 2020
Adoption Hearing • August 20, 2020

THE CORRADINO GROUP

ACKNOWLEDGMENTS

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1.0 | INTRODUCTION

The purpose of the Islamorada, Village of Islands, (the "Village") Water Supply Facilities Work Plan is to identify and plan for the water supply sources and facilities needed to serve existing and new development within the local government's jurisdiction. Chapter 163, Part 11, F.S., requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district approves a regional water supply plan or its update. The Lower East Coast Water Supply Plan Update was approved by the South Florida Water Management District (SFWMD) on November 8, 2018. Therefore, the deadline for local governments within the Lower East Coast jurisdiction to amend their comprehensive plans to adopt a Work Plan Update is May 2020.

Water users in the Village obtain their water directly from the Florida Keys Aqueduct Authority (FKAA), which is responsible for ensuring that enough capacity is available for existing and future customers.

The Village's Work Plan will reference the initiatives already identified in the FKAA 20-year Master Plan since the Village is a retail buyer. According to state guidelines, the Work Plan and the comprehensive plan amendment must address the development of traditional and alternative water supplies, bulk sales agreements, and conservation and reuse programs that are necessary to serve existing and new development for at least a 10-year planning period. The Village's Work Plan will be for a 10-year planning period and identify projects from the FKAA Master Plan consistent with this planning period.

The Village's Work Plan is divided into four sections:

- Section 1- Introduction
- Section 2 - Background Information
- Section 3 - Data and Analysis
- Section 4 - Work Plan Projects/Capital Improvements Element/Schedule
- Section 5 - Goals, Objectives, and Policies

1.1 Statutory History

The Florida Legislature has enacted bills in the 2002, 2004, 2005, 2011, 2012, 2015, and 2016 sessions to address the state's water supply needs. These bills, especially Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapter 163 and 373 Florida Statutes (F.S.) by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, these bills established the basis for improving coordination between the local land use planning and water supply planning.

In 2011, Sections 163.3177(6)(c)3 and Section 163.3177(6)(d)3, F.S. were modified to exempt water supply planning amendments to the limitation on the frequency of amendments to the comprehensive plan and to include considerations for industrial and agricultural uses when the regional water management district plans for water quantity and quality. 2015, Section 163.3177(6)(c)4, F.S. was modified to state that a local government that does not own, operate, or maintain its own water supply facilities and is served by a public water utility with a permitted allocation of greater than 300 million gallons per day is not required to amend its comprehensive plan in response to an updated regional water supply plan or maintain a work plan if the local government's usage of water is less than 1 percent of the public water utility's total permitted allocation. This exemption does not apply to the FKAA or any of the municipalities served by it.

1.2 Statutory Requirements

Each local government must comply with the following requirements:

1. Coordinate appropriate aspects of its comprehensive plan with the appropriate water management district's regional water supply plan, [163.3177(4)(a), F.S.]
2. Ensure that its Future Land Use Plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177(6)(a)2d, F.S., effective July 1, 2005]. Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted to the Department for review. The submitted package must also include an amendment to the Capital Improvements element, if necessary, to demonstrate that adequate public facilities will be available to serve the proposed Future Land Use Map modification.
3. Ensure that adequate water supplies and facilities are available no later than the date on which the local government anticipates issuing a certificate of occupancy and consult with the applicable water supplier prior to approving a building permit, to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy [s.163.3180(2), F.S., effective July 1, 2005].
4. For local governments subject to a regional water supply plan, revise the General Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element (the "Infrastructure Element"), within 18 months after the water management district approves an updated regional water supply plan, to:
 - a. Identify and incorporate the alternative water supply projects(s) selected by the local government from projects identified in the updated regional water supply plan, or the alternative project proposed by the local government under s. 373.0361(7), F.S. [s. 163.3177(6)(c), F.S.];
 - b. Identify the traditional and alternative water supply projects, bulk sales agreements, and the conservation and reuse programs necessary to meet current and future water use demands within the local government's jurisdiction [s.163.3177(6)(c), F.S.]; and
 - c. Include a water supply facilities work plan for at least a 10-year planning period for constructing the public, private, and regional water supply facilities identified in the element as necessary to serve existing and new development. [s. 163.3177(6)(c), F.S.].
5. Revise the Five-Year Schedule of Capital Improvements to include any water supply, reuse, and conservation projects and programs to be implemented during the five-year period.
6. To the extent necessary to maintain internal consistency after making the changes described in Paragraphs 1 through 5 above, revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period, considering the appropriate regional water supply plan, the applicable District Water Management Plan, as well as applicable consumptive use permit(s), [s 163.3177(6)(d)2b, F.S.]
7. To the extent necessary to maintain internal consistency after making changes described in Paragraphs 1 through 5 above, revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with applicable regional water supply plans and regional water supply authorities' plans [s.163.3177(6)(h)l., F.S.].
8. Local governments are required to comprehensively evaluate and update the Comprehensive Plan to reflect changes in local conditions every seven years. The evaluation could address the local government's need to update their Work Plan, including the development of alternative water supplies, and determine whether the identified alternate water supply projects, traditional water supply projects, and conservation and reuse programs are meeting local water use demands [s.163.3181(3), F.S.].
9. Local governments may be exempt from updating their Work Plan if they meet certain criteria. A local government that does not own, operate, or maintain its own water supply facilities and is served by a public water supply entity with a permitted allocation of 300 million gallons per day or greater is not required to amend its Comprehensive Plan when an RWSP is updated if the local government uses less than 1 percent of the public water supply entity's total permitted allocation. However, the local government must cooperate with the public water supply entity that provides service within its jurisdiction and must keep the Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge element up to date, pursuant to Section 163.3191, F.S. A local government should contact the Florida Department of Economic Opportunity (DEO) to verify its qualifications for the exemption [Section 163.3177(6)(c)4., F.S.].

2.0 | BACKGROUND INFORMATION

2.1 Overview

Islamorada, Village of Islands, was incorporated in 1997, making it the fourth municipality established in Monroe County. The Village consists of four main islands: Lower and Upper Matecumbe, Windley and Plantation Keys. The current permanent population estimate is 5,990 residents based on the most recent University of Florida Bureau of Economic and Business Research (BEBR April 1, 2018) data. The Village has a significant "seasonal population" of approximately 2,352 people. On any given day there are additional "transient residents" that may lodge in the Village for several days upward to a month. All of these population segments will utilize the Village's potable water resources. The combined amount of all population segments represents the "functional population" of the Village that will create a demand for water usage. For this Plan the functional population value is used in all per capita calculations and estimates.

The Village has a Building Permit Allocation System (BPAS) that limits new residential growth to 28 units per year and nonresidential growth to 2,500 square feet per year. The potential expansion of the Village's current boundaries through annexations is extremely unlikely.

Table 1. Population Projections 2018 - 2030: Islamorada, Village of Islands

Permanent Population	
Year	Population
2018	5,990
2020	6,215
2025	6,224
2030	6,232

Source: Bureau of Economics and Business Research, Florida Population Studies, Bulletin 174

2.2 Relevant Regional Issues

Relevant regional issues that affect the Village of Islamorada include minimizing pressure on the Everglades and Biscayne Bay ecosystems and Biscayne and Floridan Aquifers. Recent SFWMD priorities have focused on creating Water Reservation rules to facilitate construction on CERP project components. The Village is in support of CERP and other restoration projects.

As the state agency responsible for water supply in the Lower East Coast planning area, the SFWMD plays a pivotal role in resource protection, through criteria used for Consumptive Use Permitting. As pressure increased on the Everglades ecosystem resource, the Governing Board initiated rulemaking to limit increased allocations dependent on the Everglades system. As a result, the Regional Water Availability Rule was adopted by the Governing Board on February 15, 2007 as part of the SFWMD's Consumptive Use Permit Program. This reduced reliance on the regional system for future water supply needs, mandates the development of alternative water supplies, and increasing conservation and reuse. Additionally, the FKAA is the Village's sole water supplier and is responsible for operating and maintaining all accessory facilities such as pump stations and associated pipelines.

The Village recognizes the Everglades ecosystem as the primary source of fresh water that serves as the foundation of the nearshore estuarine environment for Florida Bay and recharge of the Biscayne aquifer with potable water. The Village, through the adoption of Resolution 16-06-35, supports expediting Everglades restoration projects to increase freshwater flows through the Everglades ecosystem and into Florida Bay.

2.0 | BACKGROUND INFORMATION

The 2018 Lower East Coast Water Supply Plan Update water supply issues are as follows:

1. Fresh surface water and groundwater are limited; further withdrawals could have impacts on the regional system, wetlands, existing legal uses, and saltwater intrusion. As a result, additional alternative water supplies need to be developed.
2. Surface water allocations from Lake Okeechobee and the Water Conservation Areas are limited in accordance with the Lake Okeechobee Service Area RAA criteria.
3. Construction of additional storage systems (e.g., reservoirs, aquifer storage and recovery systems) to capture wet season flow volumes will be necessary to increase water availability during dry conditions and attenuate damaging peak flow events from Lake Okeechobee.
4. Expanded use of reclaimed water is necessary to meet future water supply demands and the Ocean Outfall Law.
5. Expanded use of brackish groundwater from the Floridan aquifer system requires careful planning and wellfield management to prevent undesirable changes in water quality.
6. The sole source provider of potable water to Monroe County is FKAA, whose wellfield is located in Florida City. The limited availability of SAS withdrawals presents a potential risk to the water supply for all of Monroe County. FKAA is a permitted Floridan Aquifer User, which should offset any anticipated drought-driven saltwater intrusion event. FKAA also operates reverse osmosis facilities in Marathon and Stock Island.

Other regional water issues have been identified by the Southeast Florida Regional Climate Change Compact, which includes Palm Beach, Broward, Miami-Dade and Monroe Counties. The Compact communities have agreed to use a sea level rise prediction of between 6 and 10 inches by 2030, and between 14 and 26 inches by the year 2060 for planning purposes in the Southeast Florida region until more definitive information on future sea level rise is available (the Compact's A Unified Sea Level Rise Projection for Southeast Florida, October, 2015). The potential landward movement of the saltwater intrusion line resulting from the impact of sea level rise may affect future decisions regarding the implementation of capital improvements, requiring adaptation mitigation strategies to preserve the potable water supply. Monroe County's climate change and sustainability consultants have recently summarized hydrologic modeling by the United States Geological Survey that suggests relatively low risk to the FKAA wellfields in Florida City under even the worst-case 2060 sea level rise scenarios. However, FKAA continues to monitor the most current data and analysis regarding this issue.

FKAA is a permitted Floridan Aquifer User, which should offset any anticipated drought-driven saltwater intrusion event. Further, FKAA also operates RO facilities in Marathon and Stock Island, with a combined supply capacity of 3 MGD, as an alternative water source for the county during emergencies and extreme peaks in demand.

3.0 | DATA AND ANALYSIS

The intent of the data and analysis section of the Work Plan is to describe the information that local governments need to provide to state planning and regulatory agencies as part of their proposed comprehensive plan amendments, particularly those that would change the Future Land Use Map (FLUM) to increase density and/or intensity. Additionally, population projections should be reviewed for consistency.

3.1 Population Information

The following population information is based on the FKAA as it is the provider of water for the Village. The FKAA serves three distinct populations: permanent residents, seasonal residents (those residing in the keys for 6 months or less), and day visitors. The term "functional population" is a concept that incorporates these three elements of population. Because of the unique nature of the Keys, which has an economy based on seasonal tourism, it is appropriate to use one "population" number that incorporates these three separate population components. For this Plan, the functional population value is used in all per capita calculations and estimates. Population developed by the Monroe County Planning Department (MCPD) indicate that the permanent population for the Florida Keys in 2015 was 77,600. By 2030, Monroe County is expected to have a permanent population of 75,500. In 2000, the functional population was 153,080. This increased to 155,288 in 2010 and is projected to be 157,400 in 2015; 159,051 in 2020; 160,703 in 2025; and 162,355 in 2030. The projection reflects a total increase in overall population with a predicted decrease in permanent population and increase in seasonal population. The 2040 population of the FKAA service area was estimated to be 77,101 in the Lower East Coast Water Supply Update, prepared by the South Florida Water Management District in 2018 (consistent with Monroe County Planning Department projections).

Table 2. Projected Functional Population 2015-2030: Islamorada, Village of Islands

Year	Functional Population
2015	12,574
2020	12,706
2025	12,838
2030	12,970

Source: Fishkind & Associates, Inc.; FL Keys Aqueduct Authority; Univ. FL BEBR, PS 156 and annual estimates

Based on the population data maintained by FKAA and population data gathered from the Monroe County Planning Department, it is apparent that the Village is approximately 8% of the total water use population for the FKAA. Table 3 lists the percentage of the client population which is related to the Village.

Table 3. Islamorada, Village of Islands as a Percentage of FKAA Client Base

Year	% of FKAA Client Base
2015	7.98%
2020	7.98%
2025	7.98%
2030	7.98%

Source: Calculated from Monroe County Population Projections, 2010-2030

For the past 20 years, the permanent population in Monroe County has decreased while the seasonal population has increased. This has resulted in shifting water consumption patterns.

3.2 Current and Future Areas Served

The service area of the FKAA includes all of Monroe County plus that area in Miami-Dade County within one (1) mile of the transmission pipeline. The service area includes a mix of commercial, industrial, and residential zonings that typify the land uses of a suburban area. Minimal service exists in Miami-Dade County, consisting of service to only a ranger station just outside the treatment plant. The FKAA does not expect that the distribution facilities on the System will be significantly expanded in Miami-Dade County.

The Florida Keys are comprised of a chain of more than 800 individual islands located at the southern tip of Florida. The FKAA is the only potable water purveyor within the Florida Keys. There are no competing utilities. However, the FKAA is presently precluded by its rules from serving anyone in certain environmentally sensitive areas. Excluded areas are limited to national wildlife Refuges and certain hardwood hammock lands. Additionally, the FKAA is under contract with the U.S. Department of Defense (DoD) to provide up to 2.4 million gallons per day (MGD) of potable water to DoD facilities located at Key West, Boca Chica, and throughout the Keys.

3.3 Potable Water Level of Service (LOS) Standard

Pursuant to the Comprehensive Plan, the Village has an adopted Potable Water LOS of 149.5 gallons per capita, per day (gallons/capita/day). The functional population was 12,574. Therefore, .84 MGD or more of water supply capacity is required to meet the adopted concurrency standard for potable water. FKAA uses 115 gpcd for planning purposes.

3.4 Population and Potable Water Demand Projections

The population estimates and projection and the potable water demand projections for the Village are presented below along with the historical trend. The projections are through the year 2030.

Table 4. Islamorada Waster Usage Rates 2010 to 2018

Year	Average Day MGD	Water Service Population	Per Capita Use; gpd
2010	1.92694	12,424	155
2011	2.11924	12,450	170
2012	2.09350	12,476	167
2013	2.17228	12,502	173
2014	2.22114	12,528	177
2015	2.27010	12,554	180
2016	2.27228	12,580	180
2017	2.21124	12,606	175
2018	2.24696	12,632	177
			Average: 171

While the water service population has increased slightly each year, the use per capita has fluctuated, resulting in an average user rate of 171 gallons per capita, per day. Using the historical average rate, the following table projects the average MGD that will be needed to service demand through 2030. It should be noted that the average usage rate, going back to 2010 has historically exceeded the adopted LOS of 149.5 gallon/capita/day. The per capita use is high due to the higher percentage of commercial use, hotels and resorts in particular, in Islamorada.

Table 5. Islamorada Projected Demand in MGD Using a Per Capita Average

Year	Population	Per Capita Use	Average Use MGD
2019	12,632	171	2.16
2020	12,706	171	2.17
2025	12,838	171	2.20
2030	12,970	171	2.22

Table 6.

Year	Population	Per Capita Use Adopted LOS	Projected Consumption (MGD)
2019	12,632	149.5	1.89
2020	12,706	149.5	1.90
2025	12,838	149.5	1.92
2030	12,970	149.5	1.94

3.5 Water supply Provided by Local Government

The Village does not provide water. The FKAA is the area service provider.

3.6 Water Supply Provided by Other Entities

The FKAA 2020 Master Plan is attached as Appendix A. The intent of the FKAA Plan is to meet the statutory requirements mentioned in subsection 1.2 of this plan and to coordinate water supply initiatives with the SFWMD's Lower East Coast Water Supply Plan Update.

The Florida Keys Aqueduct Authority (FKAA) is the sole provider of potable water in the Florida Keys, established by Special Legislation, Chapter 76-441, L.O.F. (as amended). FKAA's primary water supply is the Biscayne Aquifer, a shallow groundwater source. The FKAA's wellfield is located within an environmentally protected pine rockland forest west of Florida City. The location of the wellfield near Everglades National Park, along with restrictions enforced by state and local regulatory agencies, contributes to the unusually high water quality. These wells contain some of the highest quality groundwater in the state, meeting all regulatory standards prior to treatment. Additionally, the FKAA is continually monitoring, assessing, and working to eliminate potential hazards to our water source, including inappropriate aquifer utilization, unsuitable land uses, and the potential for saltwater intrusion.

The service area of the FKAA includes all of Monroe County plus that area in Miami-Dade County within one (1) mile of the transmission pipeline. The service area includes a mix of commercial, industrial, and residential zonings that typify the land uses of a suburban area. Minimal service exists in Miami-Dade County, consisting of service to only a ranger station just outside of the treatment plant. The FKAA does not expect that the distribution facilities of the System will be significantly expanded in Miami-Dade County.

The Florida Keys are comprised of a chain of more than 800 individual islands located at the southern tip of Florida. The FKAA is the only potable water purveyor within the Florida Keys. There are no other competing utilities. Additionally, the FKAA is under contract with the U.S. Department of Defense (DoD) to provide up to 2.4 million gallons per day (MGD) of potable water to DoD facilities located at Key West, Boca Chica, and throughout the Keys.

3.0 | DATA AND ANALYSIS

The Village does not provide water. The Florida Keys Aqueduct Authority (FKAA) is their water service provider and serves about 50,000 water customers in a service area that includes all of the Florida Keys. Due to the geography of the Florida Keys, operations and maintenance crews and facilities must be located throughout the service area. In addition to operating the water system, these crews respond to line breaks and other service interruptions, perform scheduled preventative maintenance and leak surveys, and maintain facilities and structures.

The groundwater from the wellfield is treated at the FKAA's Water Treatment Facility in Florida City, which currently has a maximum water treatment design capacity of 29.8 MGD. The primary water treatment process is a conventional lime softening/filtration water treatment plant and is capable of treating up to 23.8 MGD from the Biscayne Aquifer. The secondary water treatment process is the newly constructed reverse osmosis (RO) water treatment plant which is capable of producing 6 MGD from the brackish Floridan Aquifer. The product water from these treatment processes is then disinfected and fluoridated. The FKAA treated water is pumped 130 miles from Florida City to Key West supplying water to the entire Florida Keys.

The FKAA maintains storage tank facilities which provide an overall storage capacity of 45.2 million gallons system wide. The sizes of tanks vary from 0.2 to 5.0 million gallons. These tanks are utilized during periods of peak water demand and serve as an emergency water supply. Since the existing transmission line serves the entire Florida Keys and storage capacity is an integral part of the system, the capacity of the entire system must be considered together, rather than in separate service districts.

Additionally, two saltwater RO plants, located on Stock Island and Marathon, are available to produce potable water under emergency conditions. The RO desalination plants have design capacities of 2.0 and 1.0 MGD, respectively.

At present, Key West and Ocean Reef are the only areas of the County served by a flow of potable water sufficient to fight fires. Outside of Key West, firefighters rely on a variety of water sources, including tankers, swimming pools, and saltwater either from drafting sites on the open water or from specially constructed fire wells. Although sufficient flow to fight fires is not guaranteed, new hydrants are being installed as water lines are replaced to make water available for fire-fighting purposes, and pump station/tank facilities are being upgraded to provide additional fire flow and pressure.

Three major challenges facing FKAA are replacing aging infrastructure, environmental concerns, and regulatory requirements.

The potable water level of service standard for the FKAA during the next 10 years is presented below. This table also identifies maximum day and average day finished water demands.

Table 7. Projected Water Demands 2020-2030: FKAA Service Area

Year	Functional Per Capita (gpcd)	Max Day (MGD)	Average Day (MGD)
2015 (Actual)	114	21.4	17.9
2020	115	22.9	18.3
2025	115	23.2	18.6
2030	115	23.6	18.9

Source : FKAA 2019 Water Demand with Projections

The methodology developed by CH2M Hill for the FKAA Master Plan and CUP Renewal is utilized for the demand projections.

This is based on Actual Demands through 2018.

3.0 | DATA AND ANALYSIS

The table below shows a comprehensive listing of the functional population served by and the potable water demand projections for the service area of FKAA, the only utility provider for the Florida Keys.

Table 8. Projected Population and Water Demands 2020-2030: FKAA Service Area

Population		Finished Water Demands		
Year	Functional	Functional Per Capita (gpcpd)	Maximum Day (MGD)	Average Day (MGD)
2015A	156803	114	21.4	17.9
2020	159252	115	22.9	18.3
2025	161604	115	23.2	18.6
2030	163956	115	23.6	18.9

Source: FKAA 2019 Water Demand with Projections

Table 9. Florida Keys Aqueduct Authority: Potable Water Demand Summary - New Water Demand, Actual Water Demand, and Expected Water Demand

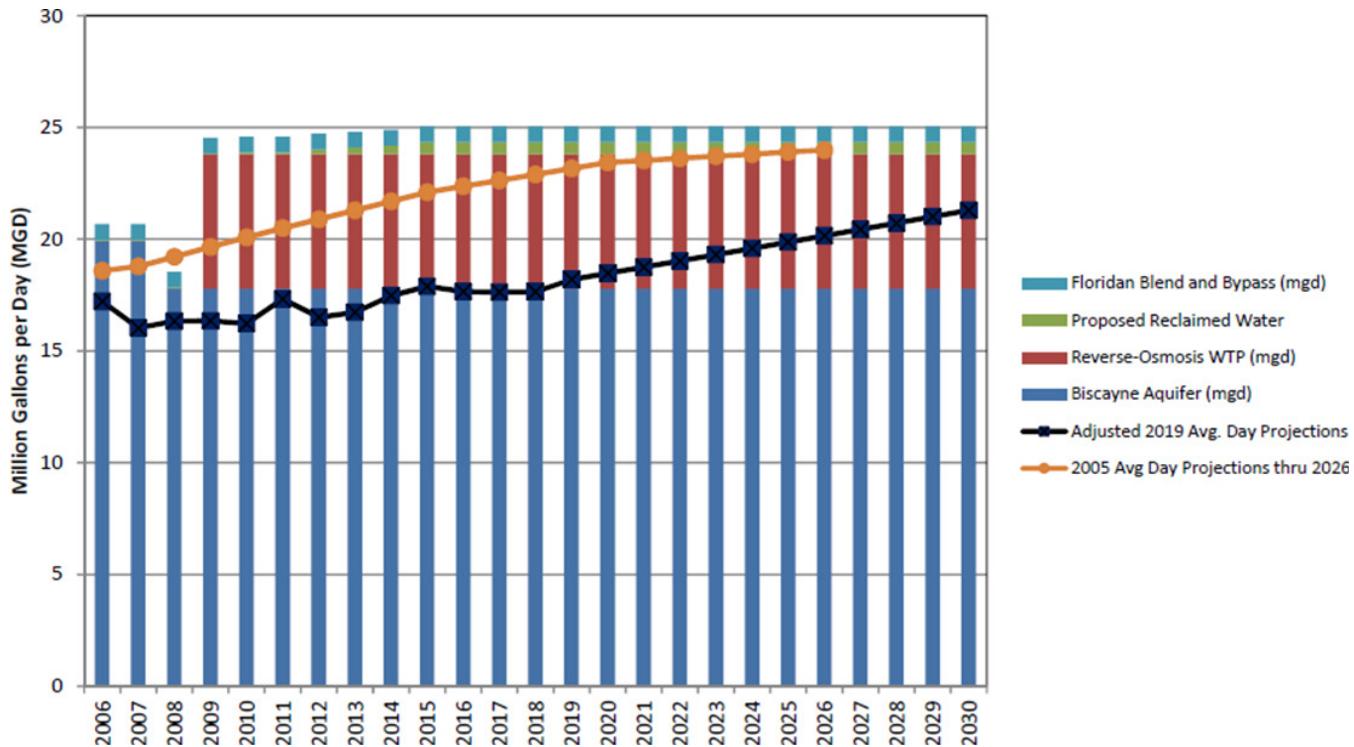
Municipality	Year - 2018		Year - 2018	Year 2019
	New Water Service - Gallons/Year	Metered Water - Gallons/Year	Actual Water Demand - Gallons/Year*	Expected Water Demand - Gallons/Year
Unincorporated Monroe County	2,740,200	2,155,814,184	2,774,528,488	2,777,268,688
City of Key West	477,900	1,579,752,473	2,033,138,233	2,033,616,133
City of Marathon	587,900	510,038,439	656,418,438	657,006,338
City of Key Colony	0	109,904,011	141,446,240	141,446,240
City of Layton	0	11,493,322	14,791,882	14,791,882
Village of Islamorada	674,300	637,249,748	820,139,135	820,813,435
Entire Florida Keys	4,480,300	5,004,252,177	6,440,462,415	6,444,942,715
SFWMD WUP Annual Allocation			8,751,000,000	8,751,000,000

*metered + unmetered water demand (ie. flushing, leaks, etc.)

3.0 | DATA AND ANALYSIS

The Figure below depicts FKAA Water Supply Available vs. Water Demand Projections.

Figure 1



In 2018, the FKAA distributed an annual average of 17.64 MGD from the Biscayne Aquifer plus 0.24 MGD from Floridan RO Production. This table also provides the water treatment capacities of the emergency RO plants. Since the emergency RO plants utilize seawater, a WUP is not required for these facilities.

Table 10. Projected Water Demand in 2019 (in MG)

	FKAA Permit Thresholds	2018 Water Demand	2019 Water Demand Projected
Annual Allocation			
Average Daily Demand	23.98	17.64	18.2
Maximum Monthly Demand	809.01	586.04	604.37
Annual Demand	8,751	6,440	6,641
Biscayne Aquifer Allocation/Limitations			
Average Daily Demand	17.79	17.64	17.79
Annual Demand	6,492	6,439	6,492
Floridan RO Production			
Average Daily Demand	6.00	0.24	0.41
Emergency RO WTP Facilities			
Kermit L. Lewin Design Capacity	2.00 (MGD)	0.00 (MGY)	0.00
Marathon RO Design Capacity	1.00 (MGD)	0.00 (MGY)	0.00

All figures are in millions of gallons.

Source: Florida Keys Aqueduct Authority, 2019

3.0 | DATA AND ANALYSIS

The 2018 figures and projections for 2019 indicate a slight increase in annual average daily demand from 17.64 to 18.2 MGD and an increase in maximum monthly demand from 586.04 MGD to 604.37 MG. Preliminary projections from FKAA for 2020 indicate no increase in annual average daily demand from the 2019 projections.

The table below provides the amount of water used on a per capita basis. Based on Functional Population and average daily demand, the average water consumption for 2018 was approximately 113 gallons per capita, which reflects the entire FKAA service area, including unincorporated Monroe County, Key West, Marathon, Islamorada, Key Colony Beach, and Layton.

Table 11. FKAA Service Area Historical Per Capita Water Use

Year	Functional Population ¹	Daily Demand (gallons) ²	Average Per Capita Water Consumption (gallons) ²
2000	153,080	17,016,393	111
2001	153,552	15,415,616	100
2002	154,023	16,962,082	110
2003	154,495	17,228,192	112
2004	154,924	17,652,596	114
2005	156,150	17,730,000	114
2006	155,738	17,287,671	111
2007	155,440	16,017,315	103
2008	154,728	16,285,383	105
2009	155,441	16,345,205	105
2010	155,288	16,210,959	104
2011	156,054	17,334,247	111
2012	156,391	16,508,197	106
2013	156,727	16,836,164	107
2014	157,063	17,472,362	111
2015	157,400	17,890,400	114
2016	157,730	17,704,100	112
2017	158,060	17,632,900	112
2018	158,391	17,643,800	113

Source: ¹ Monroe County Population Projections - Monroe County Planning Department, 2011

² Florida Keys Aqueduct Authority, 2019

3.6.1 Water Supply Permitting

FKAA's groundwater withdrawals are regulated by its WUP (13-00005-W) issued by the South Florida Water Management District (SFWMD). FKAA has an annual allocation of 6,492 MG through September 2028. The FKAA draws from four different sources in the Keys. Approximately 17.79 MGD is fresh groundwater from the Biscayne Aquifer. This is supplemented with 6 MGD of groundwater from the brackish Floridan Aquifer. Additionally, seawater desalination plants contribute emergency water supply.

Per the terms of FKAA's permit with SFWMD, maximum daily withdrawals are limited to 17 MGD during the dry season (December-April) if aquifer levels fall below 1.25 NGVD29 at USGS monitoring well G-613.

3.0 | DATA AND ANALYSIS

Table 12. Water Supply Sources

Location	Source Water	Treatment Process	Capacity (MGD)
Location	Source Water	Treatment Process	Capacity MGD
Florida City	Biscayne Aquifer	Lime Softening	17.79
Florida City	Floridan Aquifer	Low-Pressure Reverse Osmosis	6
Marathon	Seawater	Desalination and/or R.O.	1
Stock Island	Seawater	Desalination and/or R.O.	2

Table 13. Water Withdrawal Permit Thresholds

Water Source	Permit Specification	Units	Permit Threshold
Biscayne Aquifer	Average Daily Withdrawal	MGD	17.79
	Average Dry Season Withdrawal ¹	MGD	17
	Annual Withdrawal	MG	6,492
Floridan Aquifer	LPRO Capacity	MG	6
Total Annual Allocation	Average Daily Withdrawal	MGD	23.97
	Maximum Monthly Withdrawal	MG	809.01
	Annual Withdrawal	MG	8,750.84

J. Robert Dean Water Treatment Plant

The J. Robert Dean Water Treatment Plant (WTP) has an ultimate design production capacity of 29.8 million gallons per day (mgd); however, plant production is currently limited by source water constraints. The water treatment process consists primarily of lime softening, filtration, disinfection and fluoridation. In addition to water treatment, the facility has water storage tanks, high service pumping equipment, emergency diesel generators, a communications center for the transmission telemetry monitoring and operating system, and a state-certified water quality testing laboratory.

FKAA's consumptive use permit (CUP #13-00005-W) allows the withdrawal from the Biscayne aquifer of 8,751 MG on an annual basis (equivalent to 23.97 mgd) and 809.0088 MG on a maximum-month basis (equivalent to 26.97 mgd). Pumpage may be increased up to 33.57 mgd for "special events" with proper notice to SFWMD. However, during the dry season of each year (December 1 through April 30), withdrawals from the Biscayne Aquifer are limited to an average daily quantity of 17 mgd (or 2,584 MG for the 5-month period).

In summary, the J. Robert Dean WTP has sufficient capacity to meet the annual average demand, even under drought restrictions, for the entire planning period. Additionally, during non-drought conditions, the WTP has surplus capacity to meet maximum day demands. However, during drought conditions, FKAA has an immediate need to construct 0.9 MGD of additional capacity to meet the maximum day demand. By 2040, the amount of additional capacity needed to meet the maximum day demand increases to 2.0 MGD.

Water Supply Wells

FKAA withdraws the bulk of its water from its ten Biscayne Aquifer wells at the J. Robert Dean WTP. A Floridan aquifer exploratory well at the WTP is used for blending purposes, up to a maximum of 4 percent of the Biscayne Aquifer flow.

Ten wells, with capacities ranging from 3 MGD to 3.45 MGD, provide the raw water supply from the Biscayne aquifer. The raw water is combined from the individual wells into a single 24-inch diameter pipeline, where it is later split between the three reactor clarifiers.

3.7 Conservation

3.7.1 County-Wide

Climate change and sea level rise are major issues facing Islamorada and the Florida Keys. Longer drought seasons and more frequently intense hurricanes pose a potential threat to the water supply. Hurricane Irma in 2017 destroyed many homes in the Keys and caused leaks in the system where sections of the Keys were without water for days due to shut-offs. Sea water intrusion into the Biscayne Aquifer is a major concern, causing corrosion and flooding.

Florida Keys Aqueduct Authority promotes water conservation through public outreach and educational efforts. FKAA is converting from a meter network to smart meters. This allows customers to monitor their usage electronically and includes leak status reporting shortly after probable leaks occur. FKAA now has a 14-year average per capita consumption of 109 GPCD, which is much less than the rate of 138 GPCD used for the entire region in the Lower East Coast Water Supply Update, as a result of these conservation efforts.

The water conservation program has reduced the projected water consumption rates from the previous Master Plan (2006) and historical records between 2005 and 2018. The previous Master Plan estimated that the per capita consumption would increase from 118 GPCD to 150 GPCD between 2005 and 2025. Actual data from 2005 to 2018 showed a decrease in consumption from 118 GPCD to 112 GPCD. For planning level purposes, FKAA will use a slightly more conservative consumption rate of 115 GPCD, which is still significantly less than the previous estimate of 150 GPCD.

3.7.2 Local Government Specific Actions, Programs, Regulations, or Opportunities

The Village of Islamorada will continue to conserve potable water supply by enforcing water standards as delineated in the Land Development Regulations and coordinating with the South Florida Water Management District and FKAA to implement water restriction mandates. The Village will assist the FKAA with water conservation and reuse efforts and assist in implementing the FKAA's Water Conservation Plan consistent with SFWMD's Water Shortage Plan, Water Conservation Program and Lower East Coast Water Supply Plan. Recognizing that the Village is located in an area that the SFWMD identifies as a "priority water resource caution area," the Village shall strive to lower its per person per day usage of water and will continue to work with the Florida Keys Aqueduct Authority (FKAA) and the SFWMD to reduce demand within the Village for potable water.

The Village currently enforces Land Development Regulations which regulate Florida-friendly landscape practices, and the installation of water conservation irrigation systems and water-conserving plumbing fixtures. The Village informs residents and business owners of the regional water conservation programs. This information is available at Village Hall and will include brochures and pamphlets to educate and inform people as to the importance of water conservation. The Village has also established regulations limiting the clearing of native habitat.

While the Village is limited in financial resources in order to balance its annual budget, it is supportive of working with FKAA in leak detection programs. FKAA has expressed interest to work with the Village on being able to read the water meters in the Village remotely. FKAA has been converting to remote wireless meter reading of customer's meters over the last five years, placing wireless receivers to get meter readings where we can in order to get readings as often as every 15-minutes, which can then be provided to each customer. FKAA has found that when customers are given detailed consumption information, they are much more likely to conserve. FKAA has worked with Ocean Reef, Key West, Sunset Key, and U.S. Navy to co-locate wireless receivers on their property to great success. If it could work with the Village to co-locate a couple receivers, FKAA could likely complete our coverage to see how people are using the water. This would assist with real-time leak detection, benefiting the consumer to let them know they have a leak prior to receiving a significantly higher water bill.

3.0 | DATA AND ANALYSIS

The Village must work to improve their conservation efforts. An analysis of the existing levels show an increase in usage. The Village must:

- Conduct an analysis of water conservation, use, protection and the applicable policies and programs of the Village, the District, Monroe County, and the 2018 Lower East Coast Water Supply Plan Update (LEC Plan Update). The analysis should focus on how the Village is implementing, supporting or encouraging specific policies and programs.
- Through coordination with FKAA the Village needs to implement the Mandatory Year-Round Landscape Irrigation Conservation Measures, as detailed in Rule 40E-24, Florida Administrative Code.
- Identify options to conserve water, including rate structures, education programs, Florida-friendly landscape ordinances, irrigation ordinances, etc.
- Research new conservation and reuse efforts to be studied and/or implemented.

3.7.3 Intergovernmental Coordination

The provision of water supply needs in the Village of Islamorada is achieved in coordination with local, county, and regional partners including Monroe County and Florida Keys Aqueduct Authority (FKAA). FKAA is the Village's primary water partner as they provide the Village its water service utilities. FKAA ensures that water supply services are provided to the majority of residents of the Village in the most efficient and effective manner. FKAA acts to protect the region's water supply resources and coordinates the implementation of state water regulations and policies through local water planning efforts and water supply services.

Through coordination with FKAA the Village will implement Mandatory Year-Round Landscape Irrigation Conservation Measures, as detailed in Rule 40E-24, Florida Administrative Code.

The Village will continue intergovernmental coordination through the following policies: 4-1.1.5, 4-1.1.6 and 4-1.1.7.

3.8 Reuse

FKAA has three small wastewater treatment plans (WWTPs) that can produce reclaimed water.

The FKAA is evaluating the feasibility of implementing wastewater reuse to offset some of the increasing potable water demands. However, the cost associated with the lack of large volume Keys irrigation users (such as golf courses), and the limited availability of other smaller Keys irrigation users who have suitable areas to irrigate make this alternative a challenge to implement in the Keys. Wastewater reuse will need to be subsidized for reuse to be a viable alternative water supply source to help offset increasing Keys potable water demands. The combined permitted capacities of Big Coppit and Duck Key WWTPs is 0.685 MGD. The Cudjoe WWTP uses reclaimed water only at the treatment facility and does not have an off-site distribution system.

The Lower East Coast Water Supply Update estimates that the average reclaimed water demand will be 0.23 MGD for the duration of the planning horizon, which appears to be a reasonable assumption. Consequently, FKAA is not anticipating an appreciable offset of potable water use with reclaimed water.

Because of recent regulatory trends, it is unlikely that FKAA will be able to rely on the Biscayne Aquifer to meet its future needs for additional water. SFWMD's Lower East Coast Regional Water Supply Plan advocated the use of the Floridan Aquifer as an alternative supply, either for aquifer storage and recovery, (ASR) or for direct withdrawals for blending or RO. Monroe County, together with FKAA and the Key Largo Sanitary Sewer District, has implemented a public infrastructure program to construct and operate central sewer collection and treatment systems. Sewage treatment facilities will have the capability to make available gray water for non-potable water applications, such as irrigation for County parks and landscaped rights-of-way. However, the lack of possible users has inhibited the necessary investment to create and maintain a viable reuse water distribution system.

4.0 | CAPITAL IMPROVEMENTS

The FKAA 2020 Master Plan contains detailed information regarding work plan projects and is attached in the Appendix. The Plan identifies many short- and long-term improvements to the water transmission, distribution, water storage, raw water supply, and the water treatment plants. Significant upgrades and proposed new facilities to the water treatment plants are planned to improve the reliability and quality of FKAA's drinking water. Major improvements to the water system include a new Floridan aquifer wellfield that will serve a new LPRO treatment facility at the J Robert Dean WTP in Florida City, multiple rehabilitation or upgrade projects at both the Kermit H. Lewin Desalination WTP and the Marathon Desalination WTP facility to increase reliability and capacity to meet emergency and peak day flows, and various transmission/distribution line replacements, distribution pump station upgrades, and improved water storage tanks to improve delivery capacity of the system.

Prior to Hurricane Irma, FKAA spent \$7 million - \$8 million per year to fund its Capital Improvement program. FKAA has anticipated a need to fund the CIP at an annual rate of \$25.7 million per year as shown below as a result of assets reaching the end of their useful lives.

Table 14.

Category	Annual Cost (\$ Million)
Supply	\$0.2
Treatment	\$4.1
Transmission	\$10.3
Distribution	\$8.1
Facilities	\$3.0
Total	\$25.7

Source: FKAA 2020 Master Plan

The table below shows the planned funding sources for each water project planned through Fiscal Year 2024. The 5-year estimated total cost to complete the projects identified from Fiscal Years 2020–2024 is \$140.5 million, as shown.

Table 15. Five-Year Capital Improvement Funding Plan

Line No.	Description	Funding Source	Projected Fiscal Year Ending September 30					Total
CAP	ITAL COSTS - WATER SYSTEM		2020	2021	2022	2023	2024	
Facilities and Structures								
1	Key West Administration Building Replacement	Series 2019A	\$ 9,000,000	\$ 9,000,000	\$ 4,364,000	-	-	\$ 22,364,000
2	Stock Island garage replacement	RR	-	-	-	-	\$ 420,000	\$ 420,000
3	Total Water Supply		\$ 9,000,000	\$ 9,000,000	\$ 4,364,000	-	\$ 420,000	\$ 22,784,000
Water Treatment Plant								
4	SIRO Facility	RR & Series 2021	\$ 3,000,000	\$ 14,000,000	\$ 18,000,000	\$ 15,000,000	-	\$ 50,000,000
5	Total Water Treatment Plant		\$ 3,000,000	\$ 14,000,000	\$ 18,000,000	\$ 15,000,000	-	-

4.0 | CAPITAL IMPROVEMENTS

Line No.	Description	Funding Source	Projected Fiscal Year Ending September 30					Total
CAP	ITAL COSTS - WATER SYSTEM		2020	2021	2022	2023	2024	
Water Transmission System								
6	Grassy Key transmission line replacement	Series 2019A	\$ 8,000,000	-	-	-	-	\$ 8,000,000
7	Transmission Terminus rehabilitation	RR	-	-	-	\$ 840,000	\$ 3,360,000	\$ 4,200,000
8	Islamorada transmission line replacement	Series 2019A & RR	\$ 2,670,000	\$ 13,350,000	\$ 10,680,000	-	-	\$ 26,700,000
9	Total Water Transmission System		\$ 10,670,000	\$ 13,350,000	\$ 10,680,000	\$ 840,000	\$ 3,360,000	\$ 38,900,000
Distribution Mains								
10	Simonton, Front and Whitehead Streets Distribution Line Replacement	RR	\$ 750,000	-	-	-	\$ 1,250,000	\$ 2,000,000
11	Ocean Reef distribution and storage improvements	RR	-	-	-	\$ 3,200,000	\$ 3,900,000	\$ 7,100,000
12	New distribution system at No Name Key	RR	\$ 2,600,000	-	-	-	-	\$ 2,600,000
13	Total Distribution Mains		\$ 3,350,000	-	-	\$ 3,200,000	\$ 5,150,000	\$ 11,700,000
Repairs and Upgrades								
14	Box girder bridge coating/coupling replacement	RR	-	-	-	-	\$ 3,870,000	\$ 3,870,000
15	Generator control panel replacement at Florida City	RR	-	-	-	-	\$ 500,000	\$ 500,000
16	Stock Island pump station and generator replacement	RR	\$ 7,000,000	-	-	-	-	\$ 7,000,000
17	Repair/upgrade subaqueous crossing	RR	\$ 2,000,000	-	-	-	-	\$ 2,000,000
18	Repair/upgrade cathodic protection	RR	\$ 2,700,000	-	-	-	-	\$ 2,700,000
19	Repair/Upgrade electrical and instrumentation	RR	\$ 1,000,000	-	-	-	-	\$ 1,000,000
20	Total Distribution Pump Station & Storage		\$ 12,700,000	-	-	-	\$ 4,370,000	\$ 17,070,000
21	Total		\$ 38,720,000	\$ 36,350,000	\$ 33,044,000	\$ 19,040,000	\$ 13,300,000	\$ 140,454,000

4.0 | CAPITAL IMPROVEMENTS

Line No.	Description	Funding Source	Projected Fiscal Year Ending September 30					Total
CAP	ITAL COSTS - WATER SYSTEM		2020	2021	2022	2023	2024	
22	Revenue and reserves	RR	\$ 19,756,400	\$ 17,532,000	\$ 2,825,600	\$ 4,040,000	\$ 13,300,000	\$ 57,454,000
23	Series 2019A Bonds	Series 2019A	\$ 18,963,600	\$ 18,818,000	\$ 12,218,400	-	-	\$ 50,000,000
24	Future Revenue Bonds	Series 2021	-	-	\$ 18,000,000	\$ 15,000,000	-	\$ 33,000,000
25	TOTAL WATER SYSTEM FUNDING SOURCES¹		\$ 38,720,000	\$ 36,350,000	\$ 33,044,000	\$ 19,040,000	\$ 13,300,000	\$ 140,454,000

The total five-year funding sources are summarized below.

Table 16. Five-Year Capital Funding Sources

Funding Source	Five-Year Amount	% of Total
Revenue and Reserves	\$ 57,454,000	40.91%
Series 2019A Bonds	\$ 50,000,000	35.60%
Series 2021 Bonds	\$ 33,000,000	23.50%
Total	\$ 140,454,000	100.00%

The preceding tables provide the financing plan needed to fund capital improvements through Fiscal Year 2024. Because financial forecasting is less reliable beyond a 5-year period, a detailed funding analysis has not been completed past Fiscal Year 2024. As future projects move within the 5-year planning horizon, specific capital strategies will be developed. Such capital funding will likely include additional borrowing as well as cash funding from rates. The underlying objective will be to continue to fund necessary capital improvements, minimize future water rate adjustments, and maintain the creditworthiness of the FKAA Water System.

5.0 | GOALS, OBJECTIVES, AND POLICIES

5.0 | GOALS, OBJECTIVES, AND POLICIES

The following are existing and proposed Goals, Objectives, and Policies.

NEW NEEDS POLICY NUMBER

GOAL 1-4: IMPLEMENT LAND USE GOALS AND OBJECTIVES.

Islamorada, Village of Islands shall continue to monitor and evaluate development and resource conservation within the Village pursuant to goals and objectives of the Comprehensive Plan Future Land Use Element and carry out an effective implementation program as herein established.

OBJECTIVE 1-4.1: CONCURRENCY MANAGEMENT.

Pursuant to Chapter 163, F.S., and Rule 9J-5, F.A.C., Section 163.3180, Florida Statutes (F.S.) for concurrency requirements, the Village shall issue no development order or permit for development unless the applicant provides narrative and graphic information demonstrating to the satisfaction of the Village that public facilities required by the subject development shall be in place concurrent with the impacts of development. Furthermore, the applicant shall assure that the facilities operate at or above adopted level of service (LOS) standards. The applicant's narrative and graphic information shall also demonstrate that the subject development shall not reduce the levels of service for public facilities serving the development below adopted LOS standards.

Policy 1-4.1.1: Ensure Existing Concurrency Management System is Consistent with SFWMD's Lower East Coast Water Supply Plan. Islamorada, Village of Islands shall ensure that the existing concurrency management system is consistent with the South Florida Water Management District Lower East Coast Water Supply Plan updated October 10, 2013 November 8, 2018 and the Florida Keys Aqueduct Authority's Master Plan 2020 20-Year Water Supply System Capital Improvement Master Plan December 2006.

Policy 1-4.5.5: Conserve Water Including Potable Water Supply. The water supply including the potable water supply shall be conserved by enforcing water standards as delineated in the Land Development Regulations and coordinating with the South Florida Water Management District and FKAA to implement any water restriction mandates issued, through the distribution of materials to the public and promoting conservation on the Village website.

Policy 1-4.7.2: Conserve Water Through Landscaping. The Village shall assist the FKAA with water conservation efforts by implementing water conservation measures which include Florida Friendly Landscape Principles.

Policy 1-4.7.3: Conserve Water Through Education. The Village shall coordinate with FKAA public education programs for the implementation of water conservation measures.

Policy 1-4.7.4: Conserve Water Through Restrictions. The Village shall comply with SFWMD water use restrictions when shortages are declared by SFWMD.

GOAL 4-1: PROVIDE NEEDED PUBLIC FACILITIES.

Islamorada, Village of Islands shall ensure availability of needed public facilities associated with wastewater disposal, water, including potable water, distribution and treatment, drainage, solid waste collection and disposal, and protection of natural ground water aquifer recharge in a manner that is environmentally sound and protects marine environments (including sea grass meadows, near shore waters, mangrove islands and extensive living coral reef), while protecting investments in existing facilities and promotes orderly, compact growth.

OBJECTIVE 4-1.1: ADOPT LEVEL OF SERVICE (LOS) STANDARDS.

Islamorada, Village of Islands shall ensure that, at the time a development permit is issued, adequate wastewater treatment facilities, stormwater facilities, water, including potable water and solid waste disposal facilities are available to support the development at adopted level of service standards, concurrent with the impacts of such development, in accordance with the following policies:

5.0 | GOALS, OBJECTIVES, AND POLICIES

Policy 4-1.1.3: Adopt Potable Water Level of Service Standards. Islamorada, Village of Islands hereby adopts LOS standards for water, including potable water, as follows:

MEASURE	LOS STANDARD
Residential LOS	66.5 gal/cap/day
Non Residential LOS	0.35 gal/sq. ft./day
Overall LOS	± 149 171 gal/cap/day
Equivalent Residential Unit	371.7 gal/day
Minimum Pressure	20 PSI at customer
Minimum Quality	Shall be as defined by the USEPA (part 143 National Secondary Drinking Standards, 40 CFR 143, 44FR 42198)

Policy 4-1.1.5: Demand and Supply Information System. Islamorada, Village of Islands shall continue the process of updating facility demand and capacity information for water, including potable water, and shall prepare annual summaries of capacity and demand information for respective facilities and/or service areas by coordinating with the Florida Keys Aqueduct Authority.

Policy 4-1.1.6: Coordinate Between Future Land Use and Potable Water/Wastewater System Needs. The Village's Land Development Regulations shall be enforced to ensure that incremental decisions by the Village concerning water, including potable water, and wastewater system needs, plans and the location and timing of improvements shall be consistent with the objectives and policies of the Future Land Use Element, and the Conservation Element of this Comprehensive Plan, as amended on August 20, 2020, and the South Florida Water Management District Lower East Coast Regional Water Supply Plan updated October 10, 2013 November 8, 2018.

Policy 4-1.1.7: Ensure Area Wide Planning for Potable Water. Potable water within the Village shall be coordinated with regional and county plans. Islamorada, Village of Islands shall meet annually with the Florida Keys Aqueduct Authority to review and refine area wide management strategies for the delivery of water, including potable water. Florida Keys Aqueduct Authority provides an annual update with the Portable Water Demand Summary and the Water Supply Available Vs. Water Demand Projections.

Policy 4-1.1.10: Adopt a 10-Year Water Supply Facilities Work Plan. Islamorada, Village of Islands shall adopt a 10-Year Water Supply Facilities Work Plan Update, dated August 20, 2020 in coordination with the Florida Keys Aqueduct Authority that identifies existing and proposed alternative water supply projects, traditional water supply projects, conservation methods and reuse necessary to meet the water supply needs of the Village, consistent with the South Florida Water Management District Lower East Coast Regional Water Supply Plan updated November 8, 2018, and the Florida Keys Aqueduct Authority Master Plan 2020 20-Year Water Supply System Capital Improvement Master Plan Final adopted December 2006, for the 2017 Islamorada Water Supply Facilities Work Plan.

Policy 4-1.1.11: Update 10-Year Water Supply Facilities Work Plan. Islamorada, Village of Islands shall update the 10-Year Water Supply Facilities Work Plan every five years or within 18 months after the governing board of the South Florida Water Management District approves an updated regional water supply plan.

Policy 4-1.1.13: Adopt the Water Supply Facilities Work Plan. Islamorada, Village of Islands, (Village) hereby adopts by reference the Water Supply Facilities Work Plan (Work Plan), dated xxxx, for a planning period of not less than 10 years. The Work Plan addresses issues that pertain to water supply facilities and requirements needed to serve current and future development within the Village's water service area. The Village shall review and update the Work Plan at least every five (5) years within 18 months after the governing board of the water management district approves an updated regional water supply plan. Any changes affecting the Work Plan shall be included in the annual Capital Improvements Plan update to ensure consistency between the Work Plan and the Capital Improvements Element.

5.0 | GOALS, OBJECTIVES, AND POLICIES

OBJECTIVE 4-5.2: PROMOTE WATER CONSERVATION.

Islamorada, Village of Islands shall assist the FKAA with water conservation and reuse efforts and assist in implementing the FKAA's Water Conservation Plan consistent with SFWMD's Water Shortage Plan, Water Conservation Program and Lower East Coast Water Supply Plan. Recognizing that the Village is located in an area that the SFWMD identifies as a "priority water resource caution area," the Village shall strive to lower its per person per day usage of water below +1-+ 149.5 171 gallons per person per day (gpcpd) and will continue to work with the Florida Keys Aqueduct Authority (FKAA) through the site plan review process and the SFWMD to reduce demand within the Village for potable water.

Policy 4-5.2.1: Enforce Water Conservation Measures. Islamorada, Village of Islands shall continue to enforce Land Development Regulations which regulate ~~xeriscape landscape practices~~, Florida Friendly Landscape Principles, and the installation of water conservation irrigation systems and water-conserving plumbing fixtures.

Policy 4-5.2.2: Coordinate with SFWMD and FKAA on Conservation and Reuse Issues. Islamorada, Village of Islands shall continue to coordinate water conservation issues with SFWMD and FKAA policies and programs.

Policy 4-5.2.3: Provide Information on Water Conservation. The Village shall inform residents and business owners of the regional water conservation programs. This information shall be available at Village Hall and will include brochures and pamphlets to educate and inform people as to the importance of water conservation. Further information could be made available on the Village website, including links to Florida Keys Aqueduct Conservation Resources webpage and the Environmental Protection Agency's "Water Sense for Kids" webpage.

Policy 4-5.2.4: Leak Detection and Repair Program. The Village shall develop a leak detection and repair program for all Village-owned facilities by the end of 2009 2030. The Village will make every effort to establish this program at an earlier date, dependent on available programming of resources.

Policy 4-5.2.5: Ensure Adequate Water Supply for New Development. Prior to the issuance of a building permit for new development, the Village shall receive written notification from its water utility, the Florida Keys Aqueduct Authority, that adequate water to serve the new development will be available no later than the anticipated time that a certificate of occupancy is to be issued.

GOAL 4-6: PROTECT NATURAL GROUNDWATER AQUIFER RECHARGE AREAS.

Islamorada, Village of Islands shall protect the quality and quantity of water in the potable water aquifer and in the freshwater lens system to ensure public health and preserve ecosystems dependent upon fresh water.

OBJECTIVE 4-6.1: PROTECT FRESHWATER LENSES.

Islamorada, Village of Islands shall protect freshwater lenses within the Village from loss of recharge potential, ensure the preservation of the existing freshwater lens systems and from threats of groundwater contamination.

Policy 4-6.1.1: Adopt Stormwater Management Regulations. The Village shall continue to maintain Land Development Regulations for managing stormwater run-off. The regulations shall be consistent with the adopted Stormwater Management Master Plan and regulate the quality and quantity of stormwater discharges, encourage use of site specific natural drainage features to the maximum extent possible before utilizing structural stormwater control, and shall restrict the percentage of impervious areas on development and redevelopment sites.

OBJECTIVE 6-1.2: ENSURE WATER, INCLUDING POTABLE WATER, AVAILABILITY.

Islamorada, Village of Islands shall coordinate with the Florida Keys Aqueduct Authority to secure provision of water, including potable water, in sufficient quantities to meet present and projected needs, commensurate with reasonable demand through the implementation of the following policies:

Policy 6-1.2.1: Ensure Potable Water Supply. Islamorada, Village of Islands shall ensure that existing and new development shall be serviced with an adequate supply of water, including potable water, at levels of service indicated in Policy 4-1.1.3 of the Public Facilities Element, and that, at a minimum, meets State water quality standards.

5.0 | GOALS, OBJECTIVES, AND POLICIES

Policy 6-1.2.2: Protect and Conserve Potable Water Supply. Islamorada, Village of Islands shall continue to conserve and protect and monitor through the site plan review process, the quality of current and projected future water supply. In order to assist implementation of the water conservation policies of the South Florida Water Management District (SFWMD) and the Florida Keys Aqueduct Authority (FKAA) and to achieve a reduction in the current rates of water consumption, the following standards shall be in effect:

1. Potable water shall be conserved through enforcement of conservation measures and monitored through the site plan review process;
2. The Village shall continue to enforce the provisions of Chapter 34-34 of the Code specifically:
 - Chapter 34-34(a) requiring that irrigation with potable water on any property within the Village may occur between the hours of 5:00 p.m. and 9:00 a. m. only;
 - Chapter 34-34(b) requiring that irrigation systems installed after 2003 shall include a water sensing device that shall automatically discontinue irrigation during periods of rainfall.
3. The Village shall require the use of alternative water supplies such as treated wastewater, stormwater, cisterns and reverse osmosis systems for landscape irrigation for all new development and substantial redevelopment; and
4. The Village shall require the use of water-saving plumbing fixtures on all new development that meet or exceed the requirements of the Florida Building Code.

Policy 6-1.2.3: Coordinate Water Conservation Practices with other Jurisdictions. Islamorada, Village of Islands shall cooperate with local, regional, State and Federal agencies to maintain adequate fresh water supplies during dry periods and to conserve water where practicable. The Village shall coordinate with state, regional and county governments and other agencies having jurisdiction on water quantity and quality issues.

Policy 6-1.2.4: Implement Water Demand Management Policies and Programs. Islamorada, Village of Islands shall continue to cooperate with the Florida Keys Aqueduct Authority and the South Florida Water Management District to implement water demand management policies and programs consistent with the Lower East Coast Water Supply Plan Update November 8, 2018 ~~October 2013~~, the FKAA Florida Keys Aqueduct Authority Master Plan 2020 ~~20-Year Water Supply System Capital Improvement Master Plan December 2006~~ and the Village's 10-Year Water Supply Facilities Work Plan 2017 ~~2020~~ Update.

Policy 6-1.2.5: Conserve Water during Emergencies. Islamorada, Village of Islands shall cooperate with FKAA and SFWMD to conserve water resources during emergencies through the distribution of materials to the public and promoting conservation on the Village website.

Policy 6-1.2.6: Coordinate with Florida Keys Aqueduct Authority. Islamorada, Village of Islands shall update the administrative procedures, which mandates technical review of public facility plans during site plan review to be consistent with the Village's 10-Year Water Supply Facilities Work Plan. The procedures shall continue to mandate coordination among the developer, the Village and FKAA in order to efficiently manage potable water service system issues. Islamorada, Village of Islands shall not approve any development order unless the FKAA has reviewed and approved that project's water, including potable water service system, demand needs and ensures the availability of water at adopted LOS for the proposed development. The review will occur as development application are submitted for review through the Community Development Department.

Policy 6-1.4.14: Monitor FKAA Compliance with Federal Regulations Prohibiting Potable Water Hookups in Schaus' Swallowtail Butterfly Habitat. Islamorada, Village of Islands shall monitor FKAA compliance with Federal regulations prohibiting potable water hookups to designated habitat areas of the Schaus, swallowtail butterfly (pursuant to FKAA Rules Chapter 48-7).

Policy 6-1.9.8: Ensure FKAA Compliance with Federal Regulations Prohibiting Potable Water Hookups Designated Eastern Indigo Snake Habitat. Islamorada, Village of Islands shall monitor FKAA compliance with Federal regulations prohibiting water including potable water, hookups to designated habitat areas of the Eastern Indigo Snake (pursuant to FKAA Rules Chapter 48-7).

5.0 | GOALS, OBJECTIVES, AND POLICIES

Policy 8-1.1.3: Interlocal Agreement with FKAA to Identify the Availability of Water Supply to Serve Existing and New Development. By December 31, 2009 2030, Islamorada, Village of Islands, shall enter into an interlocal agreement with the FKAA to formulate a mechanism that will allow the FKAA and the Village to identify the availability of water supply needed to serve existing and new development within the Village; monitor the use of potable water; and implement such alternative water supply projects, traditional water supply projects, conservation projects and reuse necessary to meet the Village's water supply needs. The Village will make every effort to enter into an interlocal agreement at an earlier date, dependent on available programming of resources.

Policy 9-1.2.3: Adopt and Maintain the Following Level of Service Standards. Islamorada, Village of Islands shall adopt level of service standards for public facilities, for which concurrency is required, as set forth below. Prior to issuing a development order the Village shall review all proposed development to ensure consistency with adopted LOS standards. No development shall be approved that is projected to decrease the existing LOS below the adopted standard, unless mitigation by the developer is approved by the Village Council.

SUMMARY OF LEVEL OF SERVICE STANDARDS

FACILITIES	LEVEL OF SERVICE STANDARDS
Wastewater	<p>The Village, shall at a minimum , adopt the current level of service standards as provided in Federal and State regulations. The current LOS standards are as follows:</p> <p>FLORIDA STATUTORY TREATMENT STANDARDS in MG/L - BOD/TSS/TN/TP</p> <ol style="list-style-type: none">1. Design flows less than or equal to 100,000 gpd (BAT) in MG/L-10/10/10/12. Design flows greater than 100,000 gpd (AWT) in MG/L- 5/5/3/1
Wastewater Supply LOS	<ul style="list-style-type: none">• 70 gal/capita/day
Potable Water	<ul style="list-style-type: none">• Residential LOS: 66.5 gal/capita/day• Non-Residential LOS: 0.35 gal/ sq.ft ./ day• Overall LOS:\pm 149.5 <u>171</u> gallons/capita/day• ERU:371.7 gal/day
Solid Waste	<ul style="list-style-type: none">• Residential Disposal Quantity: 5.44 pounds/capita/day• Non-Residential: 6.37 pounds/acre/day
Stormwater	<ol style="list-style-type: none">1. Post development runoff shall not exceed the pre-development runoff rate for a 25-year storm event, up to and including an event with a 24-hour duration.2. Stormwater treatment and disposal facilities shall be designed to meet the design and performance standards established in Rule 62-25.025, FAC, with treatment of the runoff from the first one inch of rainfall on-site to meet the surface water quality standards required by Rule 62-302.500, FAC.3. Stormwater facilities which directly discharge into 'Outstanding Florida Waters' (OFW) shall provide an additional treatment pursuant to Rule 62-25.025(9), FAC. Stormwater facilities shall be designed so as to not degrade the receiving water body below the minimum conditions necessary to assure the suitability of water for the designated use of its classification as established in Chapter 62-302, FAC.
Recreation and Open Space	<ul style="list-style-type: none">• 3.79 acres per 1,000 population
Roadways	<ul style="list-style-type: none">• U.S. 1 shall be maintained within 5% of LOS C as measured on an overall countywide basis not dependent on any single road segment, using the measured median travel speed from the annual report of public facilities capacity.• All other roadways for which the Village is responsible shall have sufficient available capacity to operate at or above LOS D as measured by peak hour volumes at all intersections, including but not limited to all intersections with U.S. 1.

Appendix A:

Florida Keys Aqueduct Authority Master Plan 2020